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| 09/742,036 | 12/20/2000 | Toshiyuki Matsuzaki | TIJ-29142 | 8675 |

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| EXAMINER |
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SHAPIRO, LEONID

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| ART UNIT | PAPER NUMBER |
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2673

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DATE MAILED: 01/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/742,036

Applicant(s)

MATSUZAKI, TOSHIYUKI

Examiner

Leonid Shapiro

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11, 13-22 and 24-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11, 13-22 and 24 is/are rejected.
- 7) ☒ Claim(s) 14-15, 18, 20-21, 25-26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Drawings

1. The drawings were received and approved on 12-08-03. These drawings are Figures 7-9.
2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the **m** output signals must be shown or the feature(s) canceled from the claim(s). The **m** in original application is associated (See Figs. 4A, 7 and description (See page 1, Line 18 and page 9, Line 13) with LCD drivers ICs from 1 to **m**). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 16-17, 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims 16-17 and 19 are dependent of cancelled claim 12.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 11, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cha et al. (US Patent No. 6,519,020 B1) in view of Mical et al. (US Patent No. 6,191,772 B1).

As to claim 11, Cha et al. teaches a module for a display device comprising: a wiring substrate having a single level of wiring (See Figs. 3, 5 item 62, 92, in description See Col. 5, Lines 27-31 and from Col. 5, Line 66 to Col. 6, Line 1), a plurality of integrated circuits mounted on the wiring substrate, each integrated circuit having inputs coupled to n input terminals (where n is a natural number and $n \geq 2$) to receive a data signals (See Fig. 5, items 92, 94, 106, in description See Col. 6, Lines 1-27), each of the integrated circuits having the inputs arranged linearly in a row along a first side and the output on a second side parallel to the first side, the second side facing the display device, the first side facing away from the display device (See Fig. 5, items 92, 94, 106, in description See Col. 6, Lines 1-27), the wiring connected to the n input terminals to couple data signals are being parallel lines (as being divided by separating slots) (See Figs. 7-10, items 50, 35, in description See Col. 7, Lines 23-41)

Cha et al. does not teach switching circuit generating n output signals coupled to a drive signal generation circuit for driving the display device, the switching circuit sequentially connects first through n -th input terminals to first through n -th output terminals respectively when a control signal is at the first logical level and sequentially connects first through n -th input terminals to first through m -th output terminals respectively when a control signal is at the second logical level.

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Mical et al. teaches cross-over unit which can place appropriate even or odd-numbered pixel signals on respective side buses (See Fig. 1, items 150, 151, 154, in description See Col. 13, Lines 46-63).

It would have been obvious to one of ordinary skill in the art at the time of invention to implement Mical et al. approach in the Cha et al. apparatus applying it to first through n-th input terminals to first through n-th output terminals respectively in order to avoid the need of a row buffer (See Col. 3, Lines 51-54 in Mical et al. reference).

As to claim 22, Mical et al and Cha et al. do not show control signal coupled to the plurality of integrated circuits is at the first logic level for one integrated circuit of a pair of integrated circuits and is at second logic level for another integrated circuit of the pair.

Since even and odd drivers connected in series (See Fig. 1-2, LR #0, LR #2, LR #1, LR #3, items Col #1-#128, in description See Col. 10, Lines 44-56, 54-62), it would have been obvious to one of ordinary skill in the art at the time of invention to use the first logic level for one integrated circuit of a pair and second logic level for another integrated circuit of the pair in the Cha et al. and Mical et al. apparatus in order to provide a slim lightweight LCD module with less number of manufacturing processes, lower cost and simplified assembly process (See Col. 2, Lines 23-27 in Cha et al. reference).

5. Claims 13 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cha et al. and Mical et al. as aforementioned in claims 11, and 22 in view of Voisin et al. (US Patent No. 5, 680, 191).

Cha et al. and Mical et al. do not show the first substrate is a flexible substrate.

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Voisin et al. teaches the first substrate is a flexible substrate (See Figs. 3-4, item 50, in description See Col. 11, Lines 12-15).

It would have been obvious to one of ordinary skill in the art at the time of invention to implement approach as shown by Voisin et al. in Cha et al. and Mical et al. apparatus.

Allowable Subject Matter

6. Claims 14-15, 18, 20-21, 25-26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is an examiner's statement of reasons for allowance:

Relative to claims 14, 18 and 25 the major difference between the teaching of the prior art of record (US Patent No. 6,159,020, Cha et al and US Patent No. 6,191,772, Mical et al.) and the instant invention is that the said prior art **does not teach** the wiring for the first integrated circuit approaches the integrated circuit on the wiring substrate from a first direction and a wiring for the second integrated circuit approaches the integrated circuit on the wiring substrate from a second direction opposite to the first direction.

Relative to claims 15, 20-21 and 26 the major difference between the teaching of the prior art of record (US Patent No. 6,159,020, Cha et al and US Patent No. 6,191,772, Mical et al.) and the instant invention is that the said prior art **does not teach** wiring between the n-input terminals and the switching circuit comprise a continuous line between a first terminal, an input to the switching circuit and a second input terminal.

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Response to Amendment

8. Applicant's arguments filed on 08-25-03 with respect to claims 11, 13-22, 24-26 have been considered but are moot in view of the new ground(s) of rejection and 35 USC § 112 rejection of this office action.

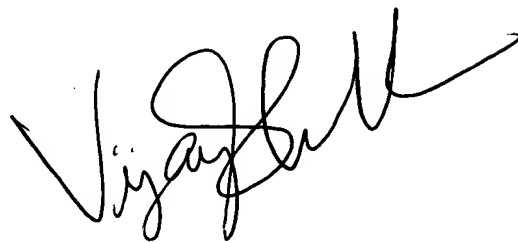
Telephone inquire

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 703-305-5661. The examiner can normally be reached on 8 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 703-305-4938. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

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**VIJAY SHANKAR
PRIMARY EXAMINER**